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(71)Applicant : SANKO DENKI:KK

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(72)Inventor : JIYOUKOUJI MOTOSUKE

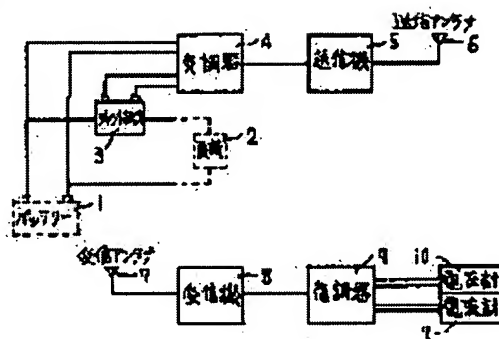
(54) ON-VEHICLE BATTERY CHECKER

(57)Abstract:

PROBLEM TO BE SOLVED: To measure voltage and an electric current when a starter is started in a driver's seat separate from a battery without laying a long lead wire all the way by transmitting it by radio wave by measuring voltage and electric current values of the battery mounted on a vehicle.

SOLUTION: Voltage is measured between both ends of a battery 1, and an electric current is measured by a shunt resistance 3 arranged between a terminal of the battery 1 and a load 2. Voltage-electric current measuring data obtained in this way is modulated, for example, to a carrier wave signal after A/D conversion is performed by a modulator 4, and is converted into a radio frequency signal by a transmitter 5, and is radiated

in a space from a transmitting antenna 6. Next, the radio frequency signal radiated in a space is received by a receiving antenna 7 and a receiver 8, and is converted into a carrier wave signal, and is demodulated by a demodulator 9, and for example, voltage-electric current measuring data by performing A/D conversion is obtained, and a voltage value and an electric current value of the battery 1 are displayed by a voltmeter 10 and an ammeter 11 on the basis of these data.



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CLAIMS

[Claim(s)]

[Claim 1] A measurement means to measure the electrical-potential-difference value and current value of a dc-battery of loading on a vehicle, and a modulation means to modulate a carrier signal by the measurement data which this measurement means measured, The transmitting means which carries out wireless transmission of said carrier signal which this modulation means modulated, and a receiving means to receive said carrier signal which this transmitting means transmitted, The mounted battery check meter characterized by having and constituting a recovery means to restore to said carrier signal which this receiving means received, and a display means to display the ***** aforementioned electrical-potential-difference value and a current value on said measurement data to which this recovery means restored.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the battery check meter who measures an electrical-potential-difference value, a current value, etc. of a dc-battery of loading on a vehicle.

[0002]

[Description of the Prior Art] In order to perform measurement of the electrical-potential-difference value of the dc-battery at the time of starter starting, and a current value etc. in order to see secular change of the dc-battery under loading conventionally on a vehicle etc. for example Although carried out by carrying out drawing and carrying out long lead wire etc. to the driver's seat which operates a starter key from two persons of those who place an instrumentation near the dc-battery and check this, and those who operate a starter key by the driver's seat, or a dc-battery The former is the point which makes [many] the number, and the latter has a problem in respect of inconvenience being in leading about of lead wire etc.

[0003]

[Problem(s) to be Solved by the Invention] An excessive person needs to be used for Object of the Invention at the time of the measurement which poses a problem when performing measurement of the electrical-potential-difference value of the dc-battery under loading conventionally on a vehicle, and a current value etc., or it is in points, like inconvenience is in leading about of a long lead wire.

[0004]

[Means for Solving the Problem] A measurement means to have accomplished in order that this invention might solve the above-mentioned problem, and to measure the electrical-potential-difference value and current value of a dc-battery of loading on a vehicle, A modulation means to modulate a carrier signal by the measurement data which this measurement means measured, The transmitting means which carries out wireless transmission of said carrier signal which this modulation means modulated, and a receiving means to receive said carrier signal which this transmitting means transmitted, It is characterized by having and constituting a recovery means to restore to said carrier signal which this receiving means received, and a display means to display the ***** aforementioned electrical-potential-difference value and a current value on said measurement data to which this recovery means restored.

[0005]

[Function] Since this invention can be made to perform measurement of the voltage-current value of the dc-battery under loading on a vehicle etc. by carrying out a radio transmission, it is made to be made by this in the driver's seat which is separated from a dc-battery in said measurement at the time of starter starting which operates and carries out a starter key, for example, without moreover needing leading about of a long lead wire by one person.

[0006]

[Example] Hereafter, the example of this invention is explained using a drawing. Drawing 1 is the block diagram of the mounted battery check meter who shows one example of this invention.

[0007] In drawing, the dc-battery 1 is carried in the vehicle, the electrical-potential-difference measurement data concerning the electrical-potential-difference value of a dc-battery 1 were obtained among the both ends of a dc-battery 1, and the current measurement data further applied to the current value of a dc-battery 1 allotted the shunt resistance 3 between one terminal of a dc-battery 1, and the load 2, and have obtained the electrical potential difference of the both ends as current measurement data. In addition, the line current of a dc-battery which changes into what is depended on the shunt resistance 3, for example, is carried out using a Faraday cell etc. is replaced with a measurement means to measure by non-contact, and you may make it these current measurement data acquire it.

[0008] Thus, after A/D conversion of said electrical-potential-difference measurement data and current measurement data of the obtained dc-battery 1 is carried out with a modulator 4, for example, a carrier signal is modulated, further, this carrier signal is changed into a radio frequency signal with a transmitter 5, from the transmitting antenna 5, space radiation is carried out and wireless transmission of it is carried out.

[0009] Next, it is received by a receiving antenna 7 and the receiver 8, said radio frequency signal by which space radiation was carried out is changed into said carrier signal, and it restores to this carrier signal with a demodulator 9 further, for example, said said electrical-potential-difference measurement data and current measurement data by which A/D conversion was carried out are obtained, and the electrical-potential-difference value and current value of a dc-battery 1 are displayed with a voltmeter 10 and an ammeter 11 based on data, such as this.

[0010] Here, a modulator 4, a transmitter 5, besides the transmitting antenna 6 are packed into the same case, are arranged, and further, the power source of modulator 4 grade is equipped with the dc-battery of dedication, places this case near the dc-battery 1, and they input the electrical-potential-difference measurement data and current measurement data of a dc-battery 1 into a modulator 4 by the approach of illustration using lead wire. In addition, shunt resistance 3 may be dedicated and used as the same case as modulator 4 grade in this case, and the output of a transmitter 5 is made into what Wireless Telegraph Law permits. Moreover, a receiving antenna 7, a receiver 8 besides a demodulator 9 and a voltmeter 10, and an ammeter 11 are dedicated to the same case, and the power source of recovery 8 grade is equipped with the dc-battery of dedication, and they enable it to carry it further.

[0011] Measurement of the electrical potential difference and current of a dc-battery 1 comes to be able to do the electrical-potential-difference measurement data and current measurement data of a dc-battery 1 by this in the location which the radio transmission was carried out, for example, was left [driver's seat].

[0012] in addition -- even if it digitizes transmission of the electrical-potential-difference measurement data of a dc-battery 1, and current measurement data (both analog data), and may carry out the pulse strange recovery of it, it may carry out [it may carry out A/D conversion like the above-mentioned explanation, and] it (to serial data) and it is made to carry out by carrying out FM strange recovery (V-F/F-V conversion) with analog data as it is -- ** -- a lightwave signal etc. may be used without being further based on a radio frequency signal. Moreover, it considers as digital display (digital display, a bar display, lamp display, etc.), and also may be made to carry out the analog display of a voltmeter 10 and the ammeter 11. Moreover, this invention can apply said measurement besides a dc-battery.

[0013]

[Effect of the Invention] As explained above, since this invention can be made to perform measurement of the voltage-current value of the dc-battery under loading on a vehicle etc. by the above-mentioned configuration by carrying out a radio transmission, it comes be made in the driver's seat which is separated from a dc-battery in said measurement at the time of starter starting which operates and carries out a starter key, for example, without moreover needing leading about of a long lead wire by one person, and makes said measurement very easy.

[0014]

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(71) 出願人 597017605

株式会社三光電機

東京都保谷市本町3丁目12番

(72) 発明者 城光寺 基介

東京都保谷市本町3丁目12番

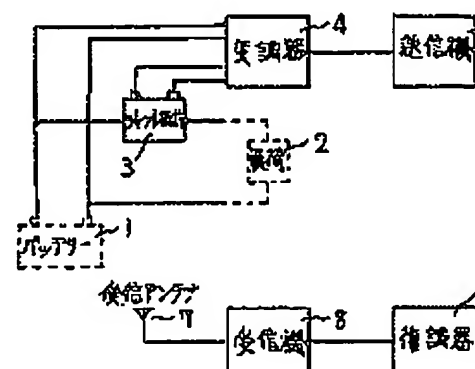
三光電機社内

(54) 【発明の名称】 車載バッテリーチェッカー

(57) 【要約】

【目的】 たとえばスターターキーを操作してするスターター起動時の車に搭載中のバッテリーの電圧・電流計測を容易にする。

【構成】 車に搭載のバッテリーの電圧値及び電流値を計測する計測手段と、該計測手段が計測した計測データで搬送波信号を変調する変調手段と、該変調手段が変調した前記搬送波信号を無線送信する送信手段と、該送信手段が送信した前記搬送波信号を受信する受信手段と、該受信手段が受信した前記搬送波信号を復調する復調手



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【特許請求の範囲】

【請求項1】 車に搭載のバッテリーの電圧値及び電流値を計測する計測手段と、該計測手段が計測した計測データで搬送波信号を変調する変調手段と、該変調手段が変調した前記搬送波信号を無線送信する送信手段と、該送信手段が送信した前記搬送波信号を受信する受信手段と、該受信手段が受信した前記搬送波信号を復調する復調手段と、該復調手段が復調した前記計測データに基づいて前記電圧値及び電流値を表示する表示手段とを備えて構成したことを特徴とする車載バッテリーチェッカー。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、車に搭載のバッテリーの電圧値及び電流値等を計測するバッテリーチェッカーに関するものである。

【0002】

【従来の技術】従来、車に搭載中のバッテリーの経年変化等を見るために、たとえばスターター起動時のバッテリーの電圧値及び電流値の計測等を行なうには、計測器をバッテリーの近くに置いてこれを確認する者と運転席でスターターキーを操作する者との二人で、あるいはバッテリーからスターターキーを操作する運転席まで長いリード線を引いてする等して行なっているが、前者は人数を多くする点で、また後者はリード線の引き回しに不便がある等の点で問題がある。

【0003】

【発明が解決しようとする課題】発明が解決しようとする課題は、従来、車に搭載中のバッテリーの電圧値及び電流値の計測等を行なううえで問題となっている、計測時に余分な人を使う必要があり、あるいは長いリード線の引き回しに不便がある等の点にある。

【0004】

【課題を解決するための手段】本発明は、上記問題を解決するために成されたもので、車に搭載のバッテリーの電圧値及び電流値を計測する計測手段と、該計測手段が計測した計測データで搬送波信号を変調する変調手段と、該変調手段が変調した前記搬送波信号を無線送信する送信手段と、該送信手段が送信した前記搬送波信号を受信する受信手段と、該受信手段が受信した前記搬送波

【0006】

【実施例】以下、本発明の実施例を図面。図1は本発明の一実施例を示す車載バッカーのブロック図である。

【0007】図において、バッテリー11において、バッテリー1の電圧値に係る電圧計10及び電流値に係る電流計測データはバッテリー1と負荷2との間にシャント抵抗3を配し、電圧を電圧計測データとして得ている。なおデータは、シャント抵抗3によるものはファラデー素子等を使ってする、バッテリーを非接触で計測する計測手段に代えて得る。

【0008】このようにして得られた電圧計測データと電流計測データとは、たとえばA/D変換された後で搬送波信号に変換され、該搬送波信号は送信機5で無線周波信号送信アンテナ6から空間放射されて無線受信アンテナ7と受信機8とで受信され、データに変換され、さらにこの搬送波信号は、たとえば前記A/D変換された前記データと電流計測データとを得て、これ等の電圧計10及び電流計11でバッテリー1の電圧を表示する。

【0010】ここで、変調器4と送信機アンテナ6とは同一ケースにまとめて配し、器4等の電源は専用のバッテリーを備え、バッテリー1の近傍に置いて、バッテリーデータと電流計測データとはリード線を用いて変調器4へ入力する。なおこの場合、3を変調器4等と同一ケースに納めてし、機5の出力は電波法が許容するものにす、アンテナ7と受信機8それに復調器9及び電流計11とは同一ケースに納めて、さらに1は専用のバッテリーを備えて、携帯でき、

【0011】これによって、バッテリーデータと電流計測データとは、無線伝送さる。運転席等の離れた位置でバッテリー1の

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また本発明は、前記計測をバッテリーの他にも応用できる。

【0013】

【発明の効果】以上説明したように本発明は、上記構成によって、車に搭載中のバッテリーの電圧・電流値等の計測を無線伝送してできるようにしている。たとえばスターターキーを操作してするスターター起動時の前記計測をバッテリーから離れた運転席で一人で、しかも長いリード線の引き回しを必要とせずに行えるようになる。前記計測をきわめて容易にする。

【0014】

【図面の簡単な説明】

【図1】本発明の一実施例を示す車載バッテリーチェッ*

*カーのブロック図である。

【符号の説明】

- 1 バッテリー
- 2 負荷
- 3 シェント抵抗
- 4 変調器
- 5 送信機
- 6 送信アンテナ
- 7 受信アンテナ
- 8 受信機
- 9 復調器
- 10 電圧計
- 11 電流計

【図1】

